

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 313

INCINERATORS, BURN-OFF OVENS, AND CREMATORIES

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MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 313
INCINERATORS, BURN-OFF OVENS AND CREMATORIES

SECTION 100 – GENERAL

101 PURPOSE: To establish standards for incinerators, burn-off ovens and crematories and to limit particulate emissions from burning in these types of units.

102 APPLICABILITY: This rule applies to:

102.1 All incinerators except the incinerators subject to subtitle C of the Resource Conservation and Recovery Act,—Rule 317 of the Maricopa County Air Pollution Control Regulations waste or to 40 CFR Part 60, Subpart Ec, 40 CFR Part 60, Subpart CCCC, or 40 CFR Part 60, Subpart DDDD.

102.2 Burn-off ovens used in metal salvage operations or used to remove non-metallic coatings from metal parts by the application of heat that meet at least one of the following conditions:

- a.** Charge burning capacity of greater than 25lb. per hour; or
- b.** Internal oven volume greater than 1 cubic yard; or
- c.** Fuel burning capacity of primary chamber greater than 200,000 Btu/hr.

102.3 Crematories.

103 EXEMPTIONS: The following types of combustion equipment and activities are exempt from this rule:

103.1 Laboratory ovens;

103.2 Environmental test chambers;

103.3 Ovens used in research facilities;

103.4 Flares;

103.5 Curing or drying ovens that are operated at temperatures lower than 600° F;

103.6 Electric induction furnaces; and

103.7 Burning-off of precleaned items consisting entirely of metal and containing no debris visible to the naked eye. Precleaning shall be done by flushing with water, solvent and/or mechanical means.

SECTION 200 - DEFINITIONS: See Rule 100 (General Provisions and Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule. For the purposes of this rule, the following definitions shall apply:

201 AFTERBURNER - The heating device associated with an incinerator, burn-off oven or crematory that is designed to provide excess air and heat for complete combustion of the gases in the primary chamber so as to control particulate emissions.

202 BURN-OFF OVEN - A heating device used to remove materials such as oils, greases, paints, coatings, rubber, laquers, and insulation from other materials or parts by burning or charring.

203 COMBUSTIBLE REFUSE - Any solid or liquid combustible waste material containing carbon in a free or combined state.

204 CONDITIONING PERIOD - A period of time (168 hours minimum) during which the COMS is operated without any unscheduled maintenance, repair, or adjustment prior to initiation of the operational test period.

- 205 CONTINUOUS OPACITY MONITORING SYSTEM (COMS)** - The total equipment necessary for the determination of opacity of emissions which provides a permanent, uninterrupted record of opacity readings.
- 206 CREMATION** - The technical process of reducing human or animal remains to bone fragments and ashes in a controlled retort or furnace using heat and/or flame. The reduction takes place through heat and evaporation. Cremation shall also include the processing and pulverization of the bone fragments.
- 207 CREMATORY** - A retort used for the cremation of remains (human or animal), body parts, and associated wrappings. This term may also be used to refer to an establishment wherein these remains are cremated. A crematory may be considered existing or new, dependent upon the date it was constructed. If it was constructed, modified, or commenced operation, including the contractual obligation to undertake and complete an order for a crematory, prior to September 22, 2004 , then it is an existing crematory.
- 208 ELECTRIC INDUCTION FURNACE** - A furnace or oven that is used to melt metals by use of electricity as the source of power or an alternating current electric furnace in which primary conductor is coiled and generates by electromagnetic induction a secondary current that develops within the metal charge.
- 209 FLUE** - A duct or passage, such as a stack or chimney, for air contaminants.
- 210 HOSPITAL WASTE** - Discards generated at a hospital or clinic, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

- 211 INCINERATION** - The process of burning involving the chemical reaction of combustible waste materials with air in which the primary purpose is the destruction and reduction in size and mass of the combustible material.
- 212 MEDICAL WASTE** - Any non-gaseous waste, including infectious wastes, which is generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in production or testing of biological agents and substances. Medical waste does not include any wastes identified under subtitle C of the Resource Conservation and Recovery Act (RCRA) as hazardous or as household waste, but includes those pharmaceuticals which are not identified as hazardous by subtitle C of RCRA. It does include cultures and stocks of infectious agents and human pathological waste; human blood and blood products, sharps, needles and broken glass that were in contact with infectious wastes; animal wastes exposed to infectious wastes, isolation wastes and unused sharps, needles and syringes. Medical waste does not include human or animal remains, caskets, containers, clothing or wrappings from crematories. An expanded definition of medical waste is found in 40 CFR 60, Subpart Ec.
- 213 METAL SALVAGE OPERATIONS** - Any source operation in which combustion or pyrolysis is carried on for the principal purpose, or with the principal result, of recovering metals which are introduced into the operation as essentially pure metals, or alloys thereof, by oxidation of physically intermingled combustible material. Operations in which there is a complete fusion of all such metals are not included in these types of operations such as in an electric induction furnace.
- 214 MULTIPLE - CHAMBER STARVED - AIR INCINERATOR** - Any incinerator consisting of two or more refractory lined combustion chambers in series, physically separated by refractory walls, interconnected by gas passage ports or ducts designed for maximum combustion of the material to be burned.

214.1 Primary Chamber - Initial compartment wherein the majority of waste volume reduction or heat treatment occurs by combustion. Primary chambers are operated at lower temperatures than secondary chambers or afterburners.

214.2 Secondary Chamber -Compartment which operates at excess air conditions wherein destruction of gas-phase combustion products occurs. Passage ports, ducts, flues, chimneys, or stacks with burners shall not be considered controlled secondary chambers unless the combustion zone exhibits design measures for the retention of the gas stream in the chamber, turbulence or mixing, and the availability of excess air as determined by engineering analysis.

215 NIGHT BURNING - Burning that occurs after sundown and before the following sunrise.

216 OPERATIONAL TEST PERIOD - A period of time (168 hours) during which the COMS is expected to operate within the established performance specifications without any unscheduled maintenance, repair or adjustment.

217 PATHOLOGICAL WASTE - Waste material that consists of only human or animal remains, anatomical parts and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

218 RESIDENCE TIME - The average time that gases spend in a defined space, also known as bulk gas average residence time.

SECTION 300 – STANDARDS

301 CONTROLS REQUIRED: No person owner or operator shall burn any combustible refuse in any incinerator, within Maricopa County or perform

metal salvage operations or remove materials utilizing a burn-off oven, or burn human or animal remains in a crematory except using the following air pollution control equipment:

301.1 Incinerators:: Incinerators shall consist of a multiple-chamber incinerator that shall operate at least at a minimum temperature of 1600°F in the secondary chamber or afterburner, with a residence time of at least 1 second in the secondary chamber or afterburner during the period of combustion in order to destruct the combustion products.

301.2 Burn-Off Ovens: Burn-off ovens shall consist of an oven with at least two chambers. The secondary compartment or afterburner shall operate at a minimum temperature of at least 1400°F with a residence time of at least 1/2 second during the period of combustion in order to destruct the combustion products.

301.3 Crematories: Crematories shall consist of an incinerator with at least two chambers. For an existing crematory, the secondary compartment or afterburner shall operate at a minimum temperature of at least 1400°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products. For a new crematory, the secondary compartment or afterburner shall operate at a minimum temperature of at least 1600°F with a residence time of at least 1 second during the period of combustion in order to destruct the combustion products. The burner in the primary chamber shall not be ignited until the secondary chamber combustion zone temperature is equal to or greater than 800°F for existing crematories and 1000°F for new crematories.

301.4 Alternate Operating Conditions: If the manufacturer's optimum design specifications for the minimum temperature or residence time of a secondary chamber or afterburner at existing crematories are

different than the temperatures or residence times set forth in Sections 301.1, 301.2 or 301.3 of this rule, the manufacturer's specifications may be used instead, providing that the owner or operator demonstrates compliance according to the test methods listed in Section 504 of this rule.

301.5 Additional Operating Conditions for Cremating Large

Bodies: Alternate operating temperatures and special procedures may be required for the cremating of large bodies (over 300 lbs.) that are different than the temperatures or residence times in the afterburner set forth in Sections 301.1, 301.2, 301.3. These alternate times and temperatures may be used, providing that the owner or operator demonstrates compliance with the test methods listed in Section 504 of this rule.

302 EMISSIONS STANDARD - OPACITY: Notwithstanding the provisions of Regulation III, Rule 300 (Visible Emissions), no person shall cause, suffer, or allow the emission into the atmosphere from any incinerator, burn-off oven, or crematory, for an aggregate of more than 30 seconds in any 60 minutes, any air contaminant that exceeds 20 percent opacity.

303 EMISSIONS STANDARD- PARTICULATES: No person shall cause, suffer, allow or permit the emission into the atmosphere from any incinerator, burn-off oven, crematory, particulate matter which exceeds 0.080 grain per cubic foot of dry flue gas at standard conditions adjusted to 7 percent oxygen (O₂) in the exhaust gases and calculated as if no auxiliary fuel had been used.

304 NIGHT BURNING: If an owner or operator chooses to perform burning at night the following conditions shall be met:

304.1 No owner or operator of an incinerator, burn-off oven or crematory shall conduct burning after sundown and before sunrise unless a COMS is operating at all times during night burning.

304.2 The COMS shall be calibrated and maintained in accordance with EPA Performance Specification # 1 and shall be calibrated at least once per day if night burning is conducted. The COMS shall be located downstream from all particulate control equipment, where condensed water is not present, free of interference from ambient light (applicable only if transmissometer is responsive to ambient light) and accessible in order to permit routine maintenance in accordance with EPA Performance Specification #1.

304.3 No night burning shall be conducted until the owner or operator insures that a properly trained operator is present at all times. The operator shall be trained in proper operation and maintenance of the COMS as well as shutdown procedures of the incinerator, crematory or burn-off oven. Therefore if the COMS registers opacity readings that are above the opacity limitations in Section 302 of this rule, then the operator has the authority and capability to shut down the operation

305 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT:

Any person incinerating or otherwise processing particulate emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and operation, devices that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if the air pollution control equipment is functioning properly and is properly maintained. Records shall be kept pursuant to Section 501 of this rule that demonstrate that air pollution control equipment meets the overall control standards required by Section 300 of this rule. If the air pollution control equipment consists of additional equipment other than an afterburner, such as a baghouse or

venturi scrubber, then an Operation and Maintenance Plan shall be submitted for approval to the Control Officer for each additional control system.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE: An owner or operator subject to this rule shall meet all applicable provisions of this rule by September 22, 2005. In addition:

401.1 An owner or operator subject to this rule shall inform the Control Officer of the intention to use any additional equipment to control emissions other than an afterburner by March 22, 2005.

401.2 An owner or operator who plans to burn at night shall ensure that the COMS is installed properly according to design specifications, calibrated, and operated for a conditioning period of at least 168 hours minimum and an operational test period of 168 hours before night burning is performed.

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING: Recordkeeping requirements shall include the following types of information:

501.1 Incinerators: Daily records of the type of material to be incinerated, total weight charged, chamber temperatures (secondary chamber temperature at the time of the ignition of the primary chamber and the secondary chamber operating temperature) and dates and times of the day that the incinerator is operating.

501.2 Burn-Off Ovens: Daily records of the type of material to be burned, chamber temperatures (secondary chamber temperature at the time of the ignition of the primary chamber and the secondary compartment operating temperature) and dates and times of the day that the burn-off oven is operating.

501.3 Crematories: Daily records of the number of bodies cremated, chamber temperatures (secondary chamber temperature at the time of the ignition of the primary chamber and the secondary compartment operating temperature) and dates and times of the day that the crematory is operating. The owner or operator of an animal crematory shall account for either the weight of the animal charged or the number and type of remains charged. In addition, if a human or animal crematory burns a large body (over 300 lbs.), the approximate weight of the body and the operating conditions shall be noted.

501.4 Night Burning: If night burning is conducted, the owner or operator shall:

a. Maintain a continuous record of opacity readings generated by the COMS. Records shall include all times that the meter is running properly. Records shall also indicate when the instrument is inoperative or has been adjusted or repaired.

b. The date and time identifying each period during which the COMS was inoperative, except for zero and span checks, and the nature of system repair or adjustment shall be reported. The Control Officer may require proof of COMS performance whenever system repairs or adjustments, other than routine maintenance, have been made.

c. A file of all data collected by the COMS or as necessary to convert monitoring data to the units of the applicable standard.

501.5 Alternate Operating Conditions: An owner or operator shall keep records of alternate temperatures and residence times, as stated in Sections 301.4 and 301.5, if used.

502 COMPLIANCE DETERMINATION - TEST METHODS: When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.

502.1 For determining total particulate matter, EPA Methods 1 through 5, or their EPA alternates approved by the Control Officer, shall be used. Both carbon dioxide and oxygen measurements shall be obtained simultaneously with each Method 5 run.

502.2 Determination of visible emissions compliance shall be made by a certified emissions observer or by a continuous emission monitor which is maintained and calibrated in accordance with EPA Performance Specification #1 (40 CFR, Part 60, Appendix B). The observer shall be qualified as an expert visible emissions evaluator and so certified by the Arizona Department of Environmental Quality or by any other agency that is acceptable to the Control Officer.

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